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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,367	07/05/2004	Da-Shuang Kuan	13371-US-PA	4366
31561	7590	03/16/2006	EXAMINER	
JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE			CHIEN, LUCY P	
7 FLOOR-1, NO. 100			ART UNIT	
ROOSEVELT ROAD, SECTION 2			PAPER NUMBER	
TAIPEI, 100			2871	
TAIWAN			DATE MAILED: 03/16/2006	

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/710,367	Applicant(s) KUAN ET AL.	
	Examiner Lucy P. Chien	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
 4a) Of the above claim(s) 3 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

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Response to Arguments

Applicant's arguments with respect to claim 1,2, 4-7 have been considered but are moot in view of the new ground(s) of rejection.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1,2,5-7 are rejected under 35 U.S.C. 103(a) as being obvious over Lien et al (US 6682786) in view of Liao et al (US 20020186343).

Regarding Claim 1,

Lien et al discloses (Fig. 1) An active component array substrate (13);
A pixel electrode layer (16), disposed over the active component array substrate (13);
an opposite substrate (18), disposed opposite to the active component array substrate (13); A common electrode layer (17), disposed over the opposite substrate (18);
Two inorganic alignment films (21,22), disposed over the pixel electrode layer (16) and the common electrode layer (17) respectively; and a negative dielectric anisotropic liquid crystal layer (23)(Column 6, Rows 50-62), disposed between the two inorganic alignments films (21,22), and aligned parallel to the inorganic alignment films.

Lien does not disclose the liquid crystal on silicon containing a silicon substrate.

Liao et al discloses (Page 1, [0005]) the use of liquid crystal on silicon. The LCOS devices are easier to manufacture than conventional LCD displays. They have higher resolution because several million pixels can be etched onto one chip. And They can be much smaller than conventional LCD displays.

It would have been obvious to one of ordinary skilled in the art to modify Lien's display to include Liao et al's silicon substrate motivated by the desire to easily manufacture the display, provide higher resolution because several million pixels can be etched onto one chip. And to provide smaller LCD displays (Page 1, [0005]).

Regarding Claim 2,

In addition to Lien and Liao et al as disclosed above, Lien discloses (Fig. 1) The active component array substrate comprises a thin film transistor (11) array substrate.
(13)

Regarding claim 5,

In addition to Lien and Liao et al as disclosed above, Lien discloses (Column 6, row 15-30) A material of the inorganic alignment film comprises silicon oxide.

Regarding Claim 6,

In addition to Lien and Liao et al as disclosed above, Lien discloses (Fig. 1) The opposite substrate (18) comprises a color filter substrate (25).

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Regarding Claim 7,

In addition to Lien and Liao et al as disclosed above, Lien discloses (Column 4, Row 20-25) A material of the common electrode layer comprises indium tin oxide or indium zinc oxide.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lien et al (US 6682786) and Liao et al in view of Hachisu et al (US 2002/0113928).

Lien et al and Liao et al do not disclose the negative dielectric anisotropic liquid crystal layer comprises ferroelectric liquid crystal layer.

Hachisu et al discloses (Page 1, [0009]) the negative dielectric anisotropic liquid crystal layer comprises a chiral smectic C device, which is a ferroelectric liquid crystal layer. Its property is that it has a bistable memory nature and it undergoes inversion switching because of spontaneous polarization and thus demonstrates a very fast response speed thus providing excellent viewing angle characteristics.

It is obvious to one skilled in the art to modify Lien et al and Liao et al to include Hachisu et al's negative dielectric anisotropic liquid crystal layer comprising a chiral smectic C device's bistable memory nature that it undergoes inversion switching

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demonstrating a very fast response speed thus providing excellent viewing angle characteristics.

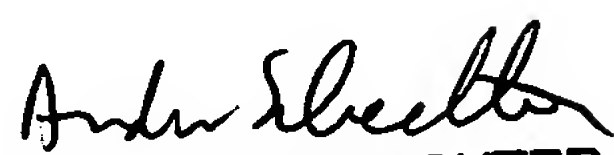
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucy P. Chien whose telephone number is 571-272-8579. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lucy Chien
Examiner
Art Unit 2871
LC


ANDREW SCHECHTER
PRIMARY EXAMINER